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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,282	03/25/2002	Frank Hofmann	1941	9040

7590
Striker Striker & Stenby
103 East Neck Road
Huntington, NY 11743

01/24/2007

EXAMINER

WOZNIAK, JAMES S

ART UNIT	PAPER NUMBER
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2626

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/030,282

Applicant(s)

HOFMANN ET AL.

Examiner

James S. Wozniak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the office action from 5/2/2006, the applicant has submitted an amendment, filed 11/1/2006, amending independent claims 1, 2, 7, and 8 to incorporate the limitations of claim 3 and further indicate that different channels (K1, K2) correspond to a *broadcast* channel raster, while arguing to traverse the art rejection based on these amended limitations (*Amendment, Pages 10-12*). The applicant's arguments have been fully considered but are moot with respect to the new grounds of rejection necessitated by the claim amendments and further in view of Nahrstedt ("*An Architecture for End-to-End Quality of Service Provision and Its Experimental Validation*," 1995).

2. In response to the amendment of Claims 1 and 2, the examiner has withdrawn the previous claim objection directed to indefiniteness with regard to statutory category (*i.e., process or apparatus*).

Response to Arguments

3. In response to the applicants' arguments directed towards the drawing objection and associated claim objection (*Amendment, Page 9*), the examiner points out that although the receiving system is an obvious variation of the transmitting system, a drawing illustrating the

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combination of demodulation units (5,8) and decoding units (6,9) is still required under 37 CFR 1.83 (a) because the drawings must show every feature of the invention specified in the claims. Also, the examiner points out that a system having two types of demodulation/decoding schemes is not an obvious variation of the claimed transmitter because the operations performed by this receiver are not simply a reverse of the operations performed at the transmitter. Further, it appears that the applicants are attempting to claim the features described on Page 5 of the specification (*i.e., next generation receivers*), wherein a receiver (Fig. 3, Element 8) is capable of processing either only a base layer or base and enhancement layers. Fig. 3, Element 8 appears to correspond to this disclosed subject matter. The examiner further points out that it appears that the specification does not seem to disclose demodulation and decoding units comprising two types of each element (5,8 and 6,9). Instead, it appears to indicate that a second generation receiver can be used as an alternate to a first generation receiver that can only process a base layer (Page 5). Thus, the examiner recommends canceling units 5 and 6 from claim 8 and optionally including the subject matter referred to on Page 5 of the specification (*receiver (Fig. 3, Element 8) that is capable of processing either only a base layer or base and enhancement layers- if it is desired to claim these features*) in order to render the drawing/claim objections moot.

4. The applicant's arguments with respect to the art rejections (*Amendment, Pages 10-12*) have been fully considered but are moot with respect to the new grounds of rejection necessitated

by the claim amendments and further in view of Nahrstedt ("*An Architecture for End-to-End Quality of Service Provision and Its Experimental Validation*," 1995).

Information Disclosure Statement

5. The examiner has fully considered the information disclosure statement filed on 4/29/2002.

Drawings

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the multiple receivers (4 and 7), demodulators (5 and 8), and decoders (6 and 9) in a single receiving system as recited in claims 2 and 8 and disclosed on page 5 of the specification must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must

be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

The objection to the drawings will not be held in abeyance.

Claim Objections

7. **Claim 8** is objected to because of the following informalities:

With respect to Claim 8 it is unclear whether the demodulation and decoding units correspond to single units (8, 9) or multiple demodulation (5,8) and multiple decoding units (6,9). The claim language seems to indicate single units, but references multiple units.

Also, with respect to Claim 8, the examiner notes that the claimed system refers to elements that are contained in separate drawings and that are not shown to exist in the same receiver system (*Figs. 1 and 3*) (*see drawing objection*).

Appropriate correction and clarification is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 1-2, 4-5, and 7-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Mansour et al in view of Nahrstedt (*"An Architecture for End-to-End Quality of Service Provision and Its Experimental Validation,"* 1995), and further in view of Campanella et al (U.S. Patent: 6,201,798).

With respect to **Claims 1 and 7**, Mansour discloses:

A method for transmission-end preparation of source-coded audio data of at least one useful signal source, in particular for transmission via AM channels (*IBOC-AM system, Col. 4, Lines 5-53*) of a predetermined channel raster with the following features:

The source coded audio data of at least one useful signal source are separated into a main data stream and at least one auxiliary data stream (*dividing coded audio into a core audio stream (C-stream) and enhancement streams (E₁ and E₂ streams), Col. 4, Lines 37-53 and Col. 5, Lines 4-27*);

Wherein the main data stream contains at least the amount of information that is required for a comprehensible reproduction of at least one useful signal source (*C-stream that provides minimum acceptable audio quality upon recovery at a receiver, Col. 4, Lines 37-53*) and the

auxiliary data stream contains information for quality improvement (*enhancement streams that allow for higher audio quality when combined with a recovered C-stream, Col. 4, Lines 37-53*);

The main and auxiliary data streams are modulated and accommodated in respective different channels of the predetermined channel raster (*modulation of core and enhancement audio streams at a modem and transmission of the streams using different communication channels, Col. 5, Line 52- Col. 6, Line 45; Fig. 2; and Col. 8, Lines 61-65*).

Although Mansour discloses the concept of dividing coded audio into core and enhancement audio streams and modulating and transmitting these streams in different communication bands (channels), these channels are related to communication frequency bands or channels and not broadcast channels as is recited in the presently claimed invention.

Transmitting base and enhancement coded audio streams in different broadcast channels is well known in the art, however, as is evidenced by the teachings of Nahrstedt (*multiple priority transmission channels used to transmit voice data from different streams, Pages 49-50*).

Mansour and Nahrstedt are analogous art because they are from a similar field of endeavor in coded audio transmission systems utilizing core and enhancement data. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Mansour with the priority channels concept taught by Nahrstedt in order to maintain a higher quality of signal over larger data loss ranges (*Nahrstedt, Page 49*).

Although Mansour in view of Nahrstedt discloses transmitting coded audio core and enhancement layers on different transmission channels, Mansour in view of Nahrstedt does not specifically suggest that a core audio stream includes signaling relating to whether an auxiliary stream is provided and the channel where such a stream is located. Campanella, however, recites

a service control header that is inserted in each audio bit stream frame that includes an auxiliary content indicator and data for referencing an auxiliary data channel (*Col. 1, Line 63- Col. 2, Line 4; Col. 2, Lines 46-55; and Col. 23, Line 64- Col. 24, Line 62*).

Mansour, Nahrstedt, and Campanella are analogous art because they are from a similar field of endeavor in coded audio transmission systems utilizing core and enhancement data. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, modify the teachings of Mansour in view of Nahrstedt with the service control header taught by Campanella in order to implement a means for dynamically controlling the reception of an audio broadcast at a remote receiver (*Campanella, Col. 2, Lines 3-4*).

With respect to **Claim 2**, Mansour discloses the transmission-end preparation method and system, as applied to Claims 1 and 7, and additionally recites:

A receiver with low reproduction quality is used to demodulate and decode only the main data stream (*core audio stream processing at a receiver, Col. 6, Line 46- Col. 7, Line 12*);

A receiver with higher reproduction quality is intentionally used to demodulate and decode only the main data stream or the main data stream and at least one associated auxiliary data stream are demodulated and decoded, where mutually associated demodulated and decoded data streams are linked to one another in such a way that an increase is achieved in the reproduction quality for the at least one useful data source (*demodulating and decoding core and enhancement audio streams and blending the streams together to generate higher quality recovered audio, Col. 6, Line 46- Col. 8, Line 34 and Col. 4, Lines 37-53*).

Although Mansour discloses the concept of dividing coded audio into core and enhancement audio streams and modulating and transmitting these streams in different communication bands (channels) at a transmission end, these channels are related to communication frequency bands or channels and not broadcast channels as is recited in the presently claimed invention. Transmitting base and enhancement coded audio streams in different broadcast channels is well known in the art, however, as is evidenced by the teachings of Nahrstedt (*multiple priority transmission channels used to transmit voice data from different streams, Pages 49-50*).

Mansour and Nahrstedt are analogous art because they are from a similar field of endeavor in coded audio transmission systems utilizing core and enhancement data. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Mansour with the priority channels concept taught by Nahrstedt in order to maintain a higher quality of signal over larger data loss ranges (*Nahrstedt, Page 49*).

Although Mansour in view of Nahrstedt discloses transmitting coded audio core and enhancement layers on different transmission channels at a transmitting end, Mansour in view of Nahrstedt does not specifically suggest that a core audio stream includes signaling relating to whether an auxiliary stream is provided and the channel where such a stream is located. Campanella, however, recites a service control header that is inserted in each audio bit stream frame that includes an auxiliary content indicator and data for referencing an auxiliary data channel (*Col. 1, Line 63- Col. 2, Line 4; Col. 2, Lines 46-55; and Col. 23, Line 64- Col. 24, Line 62*).

Mansour, Nahrstedt, and Campanella are analogous art because they are from a similar field of endeavor in coded audio transmission systems utilizing core and enhancement data. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, modify the teachings of Mansour in view of Nahrstedt with the service control header taught by Campanella in order to implement a means for dynamically controlling the reception of an audio broadcast at a remote receiver (*Campanella, Col. 2, Lines 3-4*).

With respect to **Claim 4**, Campanella further discloses an auxiliary data content indicator (*Col. 2, Lines 46-55*) and a service component control field that indicates how main and auxiliary data is decoded (*Col. 3, Lines 25-36*).

With respect to **Claim 5**, Mansour discloses the means for blending core and enhancement audio streams, as applied to claim 2, and further notes the use of enhancement streams for adding stereo components (*Col. 9, Lines 9-11*).

Claim 8 contains subject matter similar to Claims 2 and 4, and thus, is rejected for the same reasons.

10. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Mansour et al in view of Nahrstedt ("*An Architecture for End-to-End Quality of Service Provision and Its Experimental Validation*," 1995), in view of Campanella et al (*U.S. Patent: 6,201,798*) and further in view of Lou et al (*U.S. Patent: 6,370,666*).

With respect to **Claim 6**, Mansour in view of Nahrstedt, and further in view of Campanella discloses the method and system for dividing coded audio into core and

enhancement audio streams for transmission-end processing, as applied to Claim 1. Mansour in view of Nahrstedt, and further in view of Campanella does not specifically suggest that the scalability of MPEG 4 data streams is used to separate the source-coded audio data into main and auxiliary data streams, however Lou discloses the use of MPEG 4 for dividing coded audio into main and auxiliary data (*Col. 6, Lines 17-33*).

Mansour, Nahrstedt, Campanella, and Lou are analogous art because they are from a similar field of endeavor in coded audio transmission systems utilizing core and enhancement data. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, modify the teachings of Mansour with the use of MPEG 4 for dividing coded audio into main and auxiliary data as taught by Lou in order to enable the creation of enhancement layers that provide for higher quality audio reproduction (*Lou, Col 6, Lines 17-33*) using a well-known coding standard that can be implemented using readily available audio coders.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Fujino et al (*U.S. Patent: 5,436,899*)- discloses a method for encoding supplementary voice data with lower priority.

Chaddha et al (*U.S. Patent: 5,621,660*)- discloses sending base layer data on a high priority channel and enhancement layer data on a low priority channel.

Malladi et al (*U.S. Patent: 5,845,249*)- discloses a method for encoding enhancement layers on additional channels.

Aravind et al (*"Packet Loss Resilience of MPEG-2 Scalable Video Coding Algorithms," 1996*)- discloses enhancement layer bit streams containing less important information transmitted over a lower priority channel so that packet losses are more easily tolerated.


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached at (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak
1/9/2007



DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOL 2600